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# REDUCING DEPRESSION AND ANXIETY WITH EQUINE ACTIVITIES

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A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Social Work

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by  
Denise Ellison Todd

June 2020

# REDUCING DEPRESSION AND ANXIETY WITH EQUINE ACTIVITIES

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Denise Ellison Todd

June 2020

Approved by:

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## ABSTRACT

Anxiety and depression are among the most popular mental health issues in the United States and across the globe, as many people continue to face personal, familial, and systemic challenges in their lives. It is believed that equine activities (those that involve interactions with horses) can play a significant role in alleviating anxiety and depression levels in adults. So far, however, the existing scholarship contains just a handful of studies supporting such a claim. Using a pre-experimental design, this study sought to extend the mental health literature by assessing the impact of equine activities on anxiety and depression among 65 adults in the United States ( $N = 65$ ). Non-parametric analyses of the data revealed a large effect size, even after controlling for all of the demographic variables ( $r = .52$ ). That is, notwithstanding their limitations, the findings of this study suggested that equine activities are effective for reducing the severity of anxiety and depression among adults. These findings have implications for mental health and clinical social work practice in that practitioners can start considering the extent to which equine activities constitute a viable intervention for clients who experience mental health problems.

Keywords: anxiety, depression, equine activities, pre-experimental design, non-parametric analysis, clinical social work practice

## ACKNOWLEDGEMENTS

I want to acknowledge all the help I have received from Dr. Rigaud Joseph in helping me complete this research project. I also want to thank all the people connected with horses that were so accepting of me and what I was trying to accomplish. I am grateful to Whitney, Billy, Keeley, Stephanie, and Tiffany Wiltbank and Sprucedale Ranch for all the inspiration for this project.

“There is something about the outside of a horse that is good for the inside of a man.”

Winston Churchill

## DEDICATION

I dedicate this work to my children Stephanie, Katie and Todd because of their never ending support and encouragement throughout the years. I want to also dedicate this work to my sister, Tracy, who has always encouraged me, laughed with me and pushed me forward. Additionally, I dedicate this work to my parents, Ninn and Joan Todd, who both passed away when I was young and were not able to experience any of my college accomplishments. I appreciate my parents for introducing my sisters Tracy, Laurie and I to the ranch and helping me to develop an appreciation of the outdoors. I dedicate this work to my husband for always cheering me on.

## TABLE OF CONTENTS

ABSTRACT .....	iii
ACKNOWLEDGEMENTS.....	iv
LIST OF TABLES.....	vii
CHAPTER ONE: PROBLEM FORMULATION	
Introduction .....	1
Purpose of the Study .....	3
Significance of the Project for Social Work .....	4
CHAPTER TWO: LITERATURE REVIEW	
Introduction .....	5
Depression and Anxiety .....	5
Barriers to Conventional Treatment .....	6
Horses and Therapy .....	7
Theories Guiding Conceptualization .....	9
Summary .....	15
CHAPTER THREE: METHODS	
Introduction .....	16
Study Design .....	16
O <sub>1</sub> X O <sub>2</sub> .....	16
Sampling.....	17
Data Collection and Instruments.....	17
Procedures .....	19
Protection of Human Subjects .....	20



Study Variables.....	21
Data Analysis.....	23
Study Hypothesis.....	23
Summary .....	24
CHAPTER FOUR: RESULTS	
Frequency Distributions / Demographics .....	25
Presentation of the Findings .....	27
Summary .....	29
CHAPTER FIVE: DISCUSSION	
Overview.....	30
Implications for Social Work Theory, Research, Practice and Education.....	31
Limitations.....	35
Recommendations .....	36
APPENDIX A: GENERALIZED ANXIETY DISORDER 7 ITEM SCALE AND PATIENT HEALTH QUESTIONNAIRE 9 ITEM SCALE.....	37
APPENDIX B: INFORMED CONSENT .....	39
APPENDIX C: MENTAL HEALTH RESOURCES.....	41
APPENDIX D: INSTITUTIONAL REVIEW BOARD APPROVAL .....	43
REFERENCES .....	46

## LIST OF TABLES

Table 1. Bowlby's (1969) Attachment Theory through the Lenses of Joseph and Macgowan's (2019) Theory Evaluation Scale (TES).....	13
Table 2. Participant Demographic Characteristics in 2019 (N = 65).....	26
Table 3. Wilcoxon Signed Ranks Test for Anxiety.....	27
Table 4. Wilcoxon Signed Ranks Test for Depression.....	28
Table 5. Mann-Whitney U Test Results for Control Variables.....	29

## CHAPTER ONE

### PROBLEM FORMULATION

#### Introduction

Depression and anxiety are two major mental health issues faced by people in both the United States (U.S.) and globally (World Health Organization [WHO], 2017). The U.S. adult population with at least one major depressive disorder reached 15.7 million in 2014 and approximately one-third of adult Americans would experience some form of anxiety disorder over the course of their lives (Anxiety and Depression Association of America [ADAA], 2018; National Institute of Mental Health, 2017). In 2017, the number of worldwide cases for depression and anxiety reached 332 million and 264 million, respectively (ADAA, 2018; Richie & Roser, 2018).

Depression might exist long term or reoccur and has been capable of weakening an individual's capability to perform at a place of employment, school or handle daily life activities. Depression that caused health disability was ranked number one and anxiety disorder causing health disability was ranked number six for common mental disorders by WHO in 2017. Many people have suffered from both conditions at the same time and depression has been a leading factor of death by suicide (WHO, 2017). Many treatments for both depression and anxiety have been utilized by trained professionals in order to bring about positive movement for tormented clients, but despite conventional treatments such as cognitive behavioral therapy, solutions focused therapy and

others, the United States has still reported high numbers of people suffering from depression and anxiety, which has resulted in health loss and disease burden (WHO, 2017). A countless number of people with mental issues have been confronted with two things: the mental illness and the stigma and stereotype connected with mental health issues. As a result, many of these people have not sought conventional treatment (Corrigan & Watson, 2002), which has presented a problem for social work practice.

In order to provide services, social work, on the micro level, has been dependent upon a treatment seeking client. Clients that have experienced stress and have procrastinated treatment have been troubled with weaker mental health, health setbacks and postponement of seeking help (Stead et al., 2010). There have been many stereotypes and prejudices about mental illness that have prevented clients from seeking conventional treatment that would help clients live a quality life (Corrigan & Watson, 2002). Studying other types of unconventional interventions has been important so that social workers have had a wide array of different interventions to offer clients.

A different type of intervention that could help a suffering person, especially one that has been opposed to conventional face to face therapy, has been equine activities. Many people not comfortable with face to face interaction have benefitted and felt more comfortable chatting and interacting around an activity, rather than sitting in a small room across from a therapist or counselor. Equine-assisted treatment has been a particular method of psychotherapy and

activities involving the horse has used a steed as a therapeutic tool to help clients make positive emotional and behavioral changes (Schultz et al., 2007). Equine supported experiences have been the discipline of using horses as a means that have provided experiences that served as a metaphor in order to encourage emotional growth (Schultz et al., 2007). The rapport, established joining the client and horse, has helped the client develop insight along with an understanding into personal difficulties and challenged the client to change (Tidmarsh, 2005 as cited in Cantin, 2011). Research on animal assisted therapy has documented the effects animals have had on clients to bring about positive change regarding mental health conditions (Nimer & Lundahl, 2007). For centuries, animals have played a part in the healing of others, as demonstrated in the nineteenth century, when Florence Nightingale implied that a bird played a positive role for people restricted to a room due to medical issues (McConell, 2002). At present, animals have played a part for people suffering from conditions such as autism, addiction, PTSD and other mental difficulties. In general, animals seek affection and interaction with people and have been beneficial in therapy for the reason that animals tended to allow a natural propensity to generate a non-judgmental relationship with humans (Nimer & Lundahl, 2007).

### Purpose of the Study

Given the scope of anxiety and depression and their devastating impact on people across the world, it is important to find appropriate interventions to

address these disorders. Although promising, equine interventions have not yet been thoroughly studied in the existing literature. Therefore, the purpose of this study was to extend the mental health literature by assessing the impact of equine activities on anxiety and depression levels among adults in the United States. In particular, this research sought to answer the following question: How effective are equine activities in reducing levels of anxiety and depression in adults?

#### Significance of the Project for Social Work

At face value, this study is of paramount importance, as millions of individuals worldwide have been negatively affected by anxiety and depression. The results of this research present equine activities as a psychotherapy alternative for clients suffering from anxiety and depression. Its findings have significant implications for mental health-related professions. That is, the findings of this study have relevance for many areas of concentration, including clinical social work practice. Through the lenses of the results in this research, social work practitioners and other licensed professionals can start considering the extent to which equine activities constitute a viable intervention for their clients who experience mental health problems. Furthermore, by focusing on a totally different set of participants, this study extends the existing literature on mental health disorders.

## CHAPTER TWO

### LITERATURE REVIEW

#### Introduction

The chapter covered problems related to the mental health issues of depression and anxiety, barriers clients face when seeking traditional face to face treatment and equine activities as an alternative to conventional treatment. Finally, this section delved into attachment theory, which was the guiding conceptualizing theory for this research.

#### Depression and Anxiety

Effects of depression and anxiety ailments have been crushing. Many people have suffered from both conditions at the same time and depression has been a leading factor of death by suicide. The WHO (2017) reported high incidents of health loss and disease burden as a result of depression and anxiety among the people in the United States and were topped only by India and China. The watershed Global Burden of Disease research study established that major depression placed fourth among all medical illnesses resulting in health loss on the world population (Hirschfeld, 2001).

The impact that depression and anxiety had on people was not limited to health problems. The economic impact of depression in the United States in 2000 was assessed at about \$83.1 billion (Greenberg et al. 2015). Economic impact was due to direct health expenditures, suicide related death expenses

and in nonattendance days from work and reduced productivity while at work (Greenberg et. al, 2015). The primary cause for infirmity in the United States was depression resulting in an estimated four hundred million days off of work per year, more than any other bodily or mental illnesses (Greenberg, et al. 2015). Greenberg, et al. (2015) estimated by 2020 heart disease would be followed by depression as major health concerns causing ill health and anxiety disorders would rank close behind as major health problems causing disability. Between ten and twenty percent of adults, have reported to primary care doctors, many health-related grievances such as; spine pain, upper body pain, shortness of breath, palpitations of the heart, difficulty with sleep or changes in eating habits and weariness due to anxiety and depression (Hirschfeld, 2001). Early diagnosis, prevention and intervention have been necessary for change and positive movement for recovery from anxiety and depression issues. Attributed to the substantial numbers of people hurting from depression and anxiety and the many facets of a person's life the illness affects, the impact of this study for micro social work practitioners has been enormous.

### Barriers to Conventional Treatment

Social workers in the field that provide client treatment have been challenged with the problem of people needing assistance, but failed to seek treatment. Stead, Shanahan, and Neufeld (2010), stated that delay in seeking psychological health treatment and daily stress have been associated with poorer mental health and an increase in health problems. Many people that have



needed psychological health treatment have not pursued treatment because of the humiliation and misunderstandings about mental illness (Corrigan & Watson, 2002). The disgrace associated with mental illness has robbed people of an excellent life that has included good jobs, safe and secure housing, sufficient health care and involvement with varied groups of people because mental health treatment was not sought (Corrigan & Watson, 2002). Stereotypical views and feelings regarding mental health have not been held just by the uninformed and the uneducated, but by trained professionals from most mental health specialties as well (Corrigan & Watson, 2002), causing increased difficulty in a person's ability to manage issues involving mental health. Stigmas and labels have been detrimental and prevented people from seeking help for mental problems, which has been a real hindrance for social work practice. Therapies that included an activity (Ströhle, 2009) have begun to be utilized to help people talk about issues and address concerns without actually sitting face to face as in conventional therapy, thus social workers have been able to provide mental health treatment in a variety of different approaches.

### Horses and Therapy

Social workers have been challenged with the different reasons people have not wanted to go into conventional therapy including being judged, fear of what a therapist would say, questions that were asked, fear of full disclosure, reliving trauma or reliving unpleasant experiences. In contrast to human therapy, horses have been non-judgmental, horses have not had expectations or

prejudices, have not been concerned with what a person looked like, how much money a person had or did not have and were unaware of a person's professional title or the number of friends a person possessed. The qualities that horses have not been concerned with were all the virtues and characteristics that have made horses an excellent therapeutic tool for people that were otherwise opposed to conventional help. Selby and Smith-Osborne (2013) maintained engaging a horse used as a change vehicle, has supplied various distinctive features that were not available by way of other modes of treatment. Using a horse as a change agent has been an aspect of social work that has not yet been introduced in the mainstream curriculum of social work. Unlike humans, the horse has been able to respond to the immediacy of a person's intention and behavior without assumption or disapproval (Frewin & Gardiner, 2005). The relationship between horse and human has provided prospects for learning about relationship through reciprocated respect and trust. Research by Bachi, Terkel and Teichman (2012) suggested existence of the horse extended both emotional and physical security and clients developed trust and confidence, which has been a quality that the clinician could not always offer.

Horses have demanded respect because of size and power and safety around these large animals has required attention. McCormick and McCormick (1997) learned aggressive and rebellious street intellects of pubescent youth gang members diminished rapidly in the company of a horse and hard-core youth were not experienced and could not control or overthrow the animal as the youth

had done to others. Much like hostile, defiant adolescents, adults who have not overcome hostility or defiance from the past have also not been able to control or overthrow the immense power and strength of a horse. The size of the steed alone has created an opportunity to overcome fear, build a person's confidence level and has improved and raised levels of respect and admiration within the person (Kersten & Thomas, 2003; Kohanov, 2007; Levinson, 2004; McCormick & McCormick, 1997; O'Connor, 2006.). When horses have interacted with people, the horses have been able to give immediate, non-verbal feedback to the rider and horses were able to mirror the rider's emotions, thoughts and feelings with non-verbal communication back to the rider (Bachi, 2013).

### Theories Guiding Conceptualization

The capability of humans to connect with creatures has been the basis of animal-assisted experiences and the theory of attachment has provided understandings of how the formation of solid affiliations has been relatable to the human-animal bond (Phillips Cohen, 2007). Examinations have revealed that interactions with animals have been capable of being tangibly and mentally beneficial (Crawford et al. 2006). The capacity that people have connected well with animals has been the underpinning for animal assisted activities and therapy. The theory of attachment has provided understandings into the development of associations that have pertained to the person-animal bond (Phillips Cohen 2007). According to Bowlby (1969), human lives have circled around close, personal attachments, which have been primarily molded by

experiences with main people that have provided primary care. Where there has been a lack of adequate, secure attachment, severe difficulties have arisen. During attachment-based psychotherapy, the practitioner's goal has been to help the client re-construct and reappraise the relationship between client and caregiver (Bachi, 2013) in order to solve mental health issues. The practitioner's task was to create a healing atmosphere in which the client could work to solve challenges in a positive forward moving fashion. The procedure has assisted the client in reducing the influence of problematic earlier relationships and issues as well as has helped the client to improve recognition of the present state of current associations for what the relationships were (Bachi, 2013).

Previous studies have shown that people have benefitted physically and psychologically when in relationships with animals (Crawford et al. 2006). The task for a social work practitioner in attachment-based psychotherapy has been to afford a safe haven from which the individual has been able to investigate the world (Bowlby, 1988). The direction for the therapist was to help the client understand past problematic relationships that have caused serious difficulties and interfered with good mental health and explore the effect the past had on the present in hopes of recognizing how problematic attachments have influenced present relationships and present mental health status (Bachi, 2013).

Bowlby's Theory of Attachment (1969) has drawn some criticism over the years. Several limitations of the theory have been described in the research. One limitation of the theory described by Harris (1998) is that people believe that

children have mirrored the behavior of the parents. People expected that if a child had been raised by kind, loving, respectful parents, the child would turn out to be kind, loving and respectful and likewise, if a child had been raised with parents that were liars, disrespectful and unkind, the child were turn out that way (Harris, 1998). The criticism Harris (1998) had with Bowlby's (1969) theory was that a child's friends have had more power over them and learned things because of wanting to fit in to the group (Harris, 1998).

Another limitation of Bowlby's Attachment Theory (1969) is that attachment has been limited to the mother, leaving out any other caregiver figure and attachment was restricted to the infancy and early childhood stage of development, terminating during puberty (Field, 1996). The theory did not account for the influence and attachments that have occurred during adolescence, adulthood or attachments that have occurred later on in life (Field, 1996).

An additional limitation of Bowlby's Theory of Attachment (1969) was that no assessment tool was used to determine the effectiveness and usefulness of the theory. In 2019, Joseph & Macgowan, social work researchers, developed a scale to critically appraise theories in social work. The evaluation scale developed by Joseph & Macgowan (2019) used scores of 1 as the lowest possible point to 5 as the highest possible point to evaluate theories on nine different points. Theories judged through the Joseph and Macgowan lens were evaluated for coherence, conceptual clarity, philosophical assumptions,

connection with previous research, contextual testability, empirical evidence, limitations, client context and human agency. The range of scores on Joseph & Macgowan's (2019) scale were as follows: 1 to 9 = poor, 10 to 19 = Fair, 20 to 29 = Good and 30-45 = Excellent. Once assessed through the lenses of Joseph & Macgowan's (2019) Theory Evaluation Scale, and despite criticism by Harris & Field, Bowlby's attachment theory remains a solid and excellent theory with an overall scoring of 30 (see Table 1 below). As seen in Table 1 some areas of Bowlby's (1969) theory need improvement which were found in terms of boundaries and client context and human agency. The theory was found to be really strong in terms of coherence, clarity, historical roots and contextual testability. Table 1, utilized below to evaluate Bowlby's Theory of Attachment, was developed by Joseph and Macgowan (2019).

Table1. Bowlby's (1969) Attachment Theory through the Lenses of Joseph and Macgowan's (2019) Theory Evaluation Scale (TES)

<i>Item</i>	<i>Criteria</i>	<i>Score</i>
1	The theory has coherence.	5
2	The theory has conceptual clarity.	5
3	The theory clearly outlines and explains its philosophical assumptions.	3
4	The theory describes its historical roots in connection with previous research.	5
5	The theory can be tested and proven false via observational and experimental methods.	5
6	The theory has been critically tested and validated through empirical evidence.	3
7	The theory explains its boundaries or limitations.	2
8	The theory accounts for the systems within which individuals interact with people around them.	1
9	The theory recognizes humans as active agents within their environment.	1
Overall score		30
<i>Theory quality based on overall TES score: <b>Excellent</b></i>		

Despite its limitations laid bare under Joseph & Macgowan's (2019) instrument, Bowlby's Theory of Attachment has usefulness for practice. In effect, by considering attachment as a process not entirely limited to humans/mothers (Field, 1996; Harris, 1998), this theory has relevance to the current study. Indeed, the emotional bond between people and horses can be significantly therapeutic. Understanding that a horse could provide aspects of the same secure, trustworthy attachment that had the potential to afford a safe environment in which to work out mental health issues, elevates consideration for getting involved with equine activities.

During equine assisted activities, a client has had a range of opportunities to establish a safe setting and a place of security by means of a sustaining atmosphere. The horse's spine was considered to be like a therapeutic active location which embraced the client physically and symbolically (Bachi, 2013). The distinctive innate venue in which this activity has taken place permitted encouraging foundations of sustaining as the location translated to camaraderie and trust elements necessary for successful change. The approval and lack of judgment from the horse has added to patient's impression of existing embraced in a positive fashion much like the caregiving relationship described in Bowlby's Attachment Theory. Possible results for horse related experiences, for people who have suffered from poor mental health, relationship and attachment issues and has benefitted from attachment psychotherapy, have been improvement in self-respect and admiration, self-control, trust and general life fulfillment (Bachi et al., 2012).

Perhaps the strongest element of the research to date has been pointing out how devastating, far reaching and serious depression and anxiety have been and that the conditions have been on the rise, despite numerous conventional therapies. Research has been limited and has not adequately discussed reasons why people have not sought treatment and have shied away from addressing their mental health issues. However, the most important element that needs to be adequately tackled in the literature is the extent to



which equine interventions are effective for reducing levels of anxiety and depression. Hence, the purpose of this study.

### Summary

Suffering from depression and anxiety has had many repercussions. People who have sought treatment have had a much better opportunity to live a more fulfilling and healthier life, than people that have shied away from treatment. This study explored the benefits of equine experiences as an alternative or an addition to traditional face to face intervention. The Attachment Theory, as it related to equine experience, addressed the fundamental need of clients to explore the world in a safe haven without judgement and receive unconditional approval provided by the relationship with the horse. This study provided social workers with insight that was useful for clients that resisted traditional face to face therapy.

## CHAPTER THREE

### METHODS

#### Introduction

This quantitative descriptive study sought to evaluate how effective equine activities were in reducing the manifestations of anxiety and depression in adults. The chapter illuminated a comprehensive view of how the project was accomplished. The chapter contained a thorough depiction of the project design, sampling, data collection and instruments, research procedures, protection of human subjects and data analysis. The project was presented on a poster for poster day at California State University San Bernardino in June and the results were published in the Pfau Library ScholarWorks database at California State University, San Bernardino after July 2020.

#### Study Design

This study embraced a pre-experimental research approach to assess the effectiveness of equine activities with regard to reducing anxiety and depression. More specifically, the researcher adopted a one-group pretest-posttest design that can be simplified as follows:

$$O_1 \text{ X } O_2$$

In the formula above, O1 (Observation 1) consisted of the pretest assessment of anxiety and depression. Similarly, O2 (Observation 2) consisted

of the posttest assessment for these two mental health issues. The intervention X represents equine activities. This consisted of any activity that involved horses such as grooming, communicating, walking, riding, cleaning, feeding or any other activity associated with horses.

### Sampling

The researcher used a non-probability purposive sampling to select participants for this study. The sample was limited to people who were connected to and had access to horses because of the needs of the study and because the researcher wanted to approach the particular population of people that fit the criteria. The respondents were already involved and familiar with equine activities. Although generalizability was limited with a non-probability sampling, the non-probability purposive sampling was appropriate for the study because there were a limited number of primary data sources to date. Sixty-five respondents were adults, age eighteen and older, of diverse ethnicities, education and income (N = 65).

### Data Collection and Instruments

Data collection was the element that provided insights as to whether an activity was beneficial or not. The researcher used two instruments to collect data for this study: The self-administered nine question Patient Health Questionnaire (PHQ-9) for depression screening in adults and the seven question Generalized Anxiety Disorder (GAD-7) for anxiety screening in adults.

Both the PHQ-9 (Kroenke et al., 2001) and the GAD-7 (Spitzer et al., 2006) have been established and tested scales and instruments that the study used to determine the effectiveness of equine experiences in reducing the problematic traits of anxiety and depression in adults.

The Generalized Anxiety Disorder (GAD-7) screening is a seven-item anxiety assessment and was used in the study to measure the level of anxiety both before and after equine experiences. The questionnaire was designed by Robert L. Spitzer, William Kroenke, Janet B. Williams and published in 2006. The items for the GAD-7 reflect all the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) symptom criteria for General Anxiety Disorder. The GAD-7 had good reliability, as well as criterion, construct, factorial and procedural validity (Spitzer et al., 2006). The internal consistency of the GAD-7 was excellent with a Cronbach  $\alpha = 0.92$ . Test-retest reliability was also good with an intraclass correlation  $= 0.83$  (Spitzer et al., 2006). The GAD-7 is an appropriate screening to measure levels of anxiety for the study.

The Patient Health Questionnaire (PHQ-9), developed by William Kroenke, Robert L. Spitzer and Janet B. W. Williams in 2001, is a nine-item self-administered screening to assess levels of depression. The questions were based on each of the nine DSM-IV criteria for depression diagnosis. Results of the study reported that the internal reliability of the PHQ-9 was excellent, with a Cronbach's  $\alpha$  of 0.89 in the PHQ Primary Care Study and 0.86 in the PHQ-9 Obstetrics-Gynecology Study (Kroenke et al., 2001). Test-retest reliability of 0.84

was obtained (Kroenke et al., 2001). Construct validity of the PHQ-9 was assessed by looking at functional status, disability days, symptom-related difficulty and clinic visits. The PHQ-9 was a brief screening that was filled out in minutes by the patient, as well as, was conducted frequently, which revealed a bettering or worsening of depression. The PHQ-9 was a simple assessment, which made it easy to administer in this study.

The type of data collection instruments was important when asking for respondents to take part in a research project. The GAD-7 and the PHQ-9 were known and established scales and instruments and were used because they were self-administered, concise, brief and user-friendly screeners. Part of the data collection included a demographic information sheet in order to give context to the findings of the study.

### Procedures

All volunteer respondents received a numbered research packet with a corresponding numbered envelope, to ensure confidentiality, as well as a space for a personal pseudonym or other identifying mark for convenience of identification to the respondent. The packet included a written definition of equine activities, an explanation as to the intent of the research, informed consent, GAD-7 and PHQ-9 pretest, GAD-7 and PHQ-9 posttest, and a resource list. Informed consent included information as to the advantages and dangers of partaking in the project, how to acquire the results of the finished research, optional involvement and contact information of the researcher. Demographic

information included eight questions that assisted in giving context to screening results. Respondents were asked to fill out the PHQ-9 and the GAD-7 twice, both before horse experience and then again, after eight to ten hours of equine activity. The respondent sealed the envelope and left the packet in a locked drop box that was stowed in a file cabinet by the investigator. The investigator checked in with each group for times of follow up screenings after eight to ten hours of equine activity and returned to specific locations to gather follow-up data. Respondents took possession of personal research packet and filled out follow-up PHQ-9 and the GAD-7 self-administered screenings. The researcher collected all completed screenings with demographic information and shredded and destroyed all coded envelopes, pseudonyms or respondent created identifying marks. All completed research surveys were maintained in a secured box in a file cabinet at the researchers place of residence.

#### Protection of Human Subjects

The study involved sixty-five adult human subjects, in relatively good physical health and that posed little, if any risk to participants. The study was completely voluntary and adult contributors were notified prior to the study that respondents were able to vacate from the project at any time and were under no obligation to answer all questions or complete the study. Each research packet was numbered and all research materials were placed in a corresponding numbered envelope. The research packet consisted of informed consent, directions for completing the research, explanation of equine activities, before

and after PHQ-9 and GAD-7 screenings, a resource list and a space to enter a personal identity code, if desired. The personal identity code was an additional confidentiality layer, if preferred, and consisted of a pseudonym or any other identifying mark that only the respondent could identify for posttest completion and was removed, shredded and destroyed, after the screenings were completed, before information was analyzed. There was no private, identifiable information required on any part of the individual packet. All documents were deposited in a secure, locked box in a file cabinet in the researchers place of residence. There was no potential benefit of the study to anyone involved in the research. All adult respondents were provided with a list of mental health resources in case a respondent experienced any unwanted feelings related to the study or if a respondent wanted to follow-up with a mental health provider. Data from the GAD-7 and the PHQ-9 was recorded and the findings were in the results portion of the study.

### Study Variables

The study contained three groups of variables, the dependent, the independent and the control variables. The dependent variable was levels of anxiety and depression as recorded from the GAD-7 and PHQ-9 screenings administered in the posttest assessment. It is difficult to determine independent variables in one-group pretest posttest designs. For the sake of clarity, however, the researcher considered equine activities as the independent variable in this

study. The control variables pertained to the demographic characteristics such as age, gender, education, income, race/ethnicity and marital status.

The researcher adjusted both the GAD-7 scales and the PHQ-9 scales in the total scoring because the scoring was not exhaustive and the last question on both the GAD-7 and the PHQ-9 had not included points associated with levels of difficulty to perform daily life activities in the point breakdown. Respondents were asked ten questions on the PHQ-9 and eight questions on the GAD-7 with scoring as follows respectively: 0 = not at all, 1 = several days, 2 = more than half the days and 3 = nearly every day. Total scoring on the PHQ-9 was as follows: 1-4 minimal depression, 5-9 mild depression, 10-14 moderate depression, 15-19 moderately severe depression and 20-30 severe depression. Total scoring on the GAD-7 was as follows: 0-5 mild anxiety, 6-10 moderate anxiety, 11-15 moderately severe anxiety and 16-24 severe anxiety.

This study controlled for age, gender, education, income, race/ethnicity and marital status. The control variables were coded in a dichotomous fashion. Age had two values (1) 18-49 and (2) 50 and above. Education level was differentiated between (1) non-college grad to (2) college grad. Race and ethnicity were converted to (1) white and (2) non-white. Marital status was divided between (1) not married or living with partner and (2) married or living with partner. Gender was divided into two categories (1) male and (2) female. The two categories for income was (1) less than 80k and (2) more than 80k.



## Data Analysis

Researcher used the Statistical Package for the Social Sciences commonly known as the IBM SPSS Statistics Version 25.0 application to analyze the study data. Due to the small sample size, (N = 65) and the asymmetrical distribution of the data, researcher used the Wilcoxon Signed Rank test to determine the effectiveness of equine experiences in reducing the symptoms of anxiety and depression in adults. The Wilcoxon Signed Rank test was a good fit for data that was not normally distributed and was equivalent to the parametric t-test. Considering the data from the study was not normally distributed, the researcher determined that the Wilcoxon Signed Rank Test was the appropriate test for this study. This researcher also utilized the Mann-Whitney U test to determine whether the control variables (age, education, income, race/ethnicity, gender and marital status) had an impact on the dependent variable.

## Study Hypothesis

This study was conducted under the following hypothesis:

Null Hypothesis (H<sub>0</sub>): There will be no statistically significant difference in the mean rank of respondents' levels of anxiety and depression levels before and after participating in equine activities.

Alternative Hypothesis (H<sub>1</sub>): There will be a statistically significant difference in the mean rank of respondents' levels of anxiety and depression before and after participating in equine activities.

## Summary

In conclusion, the key components of the project, the design, sampling, data collection and instruments, procedures, protection of human subjects, data analysis, study hypothesis and study variables were combined and gave insights and clues, as to if equine activity helped a suffering average adult reduce symptoms of anxiety and depression, a mental health complaint for millions. The quantitative descriptive study was important to the generalist model of social work because the study addressed and evaluated the issue of another possible type of intervention to those that found traditional face to face interaction problematic.

## CHAPTER FOUR

### RESULTS

This chapter described the demographic information and explained the results of the analyzed data gathered from the PHQ-9 depression screening and the GAD-7 anxiety screening collected from the sixty-five quantitative scaled self-administered surveys. The project aimed to explore if equine experiences were effective in reducing the symptoms of anxiety and depression among adults.

#### Frequency Distributions / Demographics

Results for this study were presented in Table 2, Table 3, and Table 4. Before focusing on the said tables, frequency distributions of the data would be beneficial to report first. Table 1 below illustrates the demographic characteristics of the study participants as pertains to age, household type, gender, income, race/ethnicity, and education.

As revealed in Table 2, there were slightly less than half of participants, (about 46 %), that were under the age of 49 and a little over half, (about 54%), that were age 50 or above. The vast majority of participants, (about 80%), were either married or living with a partner, while one-fifth of participants, (about 20%), were not married or living with a partner. From a gender perspective, there were more female participants, (about 60%), than male participants, (about 40%). In terms of income, a little more than half, (about 53%), of the participants earned more than \$80k, whereas less than half (about 46%), of the participants earned less than \$80k. Similarly, slightly more than half of the participants were college

graduates (about 58%), than non-college graduates, (about 42%). Table 2 created by the researcher, displays demographic information from the research.

Table 2. *Participant demographic characteristics in 2019 (N = 65)*

Variable	N	%
<b>Age</b>	<b>65</b>	<b>100</b>
18-49	30	46.1
50 and over	35	53.8
<b>Household Type</b>	<b>65</b>	<b>100</b>
Married or living with partner	52	80.0
Not married or living with partner	13	20.0
<b>Gender</b>	<b>65</b>	<b>100</b>
Male	26	40.0
Female	39	60.0
<b>Income</b>	<b>65</b>	<b>100</b>
Less than 80K	30	46.1
80K or more	35	53.8
<b>Race/Ethnicity</b>	<b>65</b>	<b>100</b>
White	59	90.7
Non-white	6	9.3
<b>Education</b>	<b>65</b>	<b>100</b>
Non college grad	27	41.5
College grad	38	58.4

### Presentation of the Findings

The results of data analysis have been presented in Table 3, 4, and 5. As seen in Table 3 below, the presented overall results of the Wilcoxon Signed Ranks Test for Anxiety indicated that there was significant difference in the mean rank of respondents anxiety level after participating in equine activities ( $Z = 5.725$ ,  $p = .000$ ). This was a strong difference ( $r = .50$ ). Therefore, the study Hypothesis was supported for anxiety.

Table 3. Wilcoxon Signed Ranks Test for Anxiety

<i>Descriptive Statistics</i>								
Variables	N	Mean	SD	Min	Max.	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>
Anxiety Pretest	65	2.45	1.186	1	4	1.00	2.00	4.00
Anxiety Posttest	65	1.15	.404	1	3	1.00	1.00	1.00
<i>Ranks</i>								
Anxiety before and after Treatment	Ranks		N		Mean Rank		Sum of Ranks	
	Negative Ranks		42		21.50		903.00	
	Positive Ranks		0		.00		.00	
	Ties		23					
	Total		65					
<i>Test Statistics</i>								
	Anxiety before and after Treatment							
Z	5.725							
Asymp. Sig. (2-tailed)	.000							

As observed in Table 4 below, the overall results of the Wilcoxon Signed Ranks Test for Depression divulged that there was a statistically significant difference in the mean rank of respondents' depression levels after participating in equine activities ( $Z = 5.882$ ,  $p = .000$ ). This was a strong difference ( $r = .52$ ). Therefore, the study Hypothesis was also supported for depression.

Table 4. Wilcoxon Signed Ranks Test for Depression

Table 4.								
Wilcoxon Signed Ranks Test for Depression								
Descriptive Statistics								
Variables	N	Mean	SD	Min	Max.	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>
Depression Pretest	65	2.34	1.603	0	5	1.00	2.00	4.00
Depression Posttest	65	.71	.744	0	3	.00	1.00	1.00
Ranks								
Depression before and after Treatment	Ranks		N		Mean Rank		Sum of Ranks	
	Negative Ranks		46		25.11		1155.00	
	Positive Ranks		2		10.50		21.00	
	Ties		17					
	Total		65					
Test Statistics								
Z		5.882						
Asymp. Sig. (2-tailed)		.000						

The Mann-Whitney U statistical test was used to see if the control variables (education, marital status, income, age, race/ethnicity or gender) had any impact on reducing the symptoms of anxiety and depression in adults. As observed in Table 5 below, the overall findings in the Mann-Whitney U Test indicated that there was no statistically significant relationship between the dependent variable and the control variables with the exception of marital status. In fact, there was a slight correlation between marital status and level of depression at the statistically significant confidence interval ( $p=.038$ ).

Table 5. Mann-Whitney U Test Results for Control Variables

<b>Control Variables</b>	<b>Significance Level (<i>p</i>)</b>	
	Anxiety	Depression
Education	.807	.777
Marital Status	.057	.038
Income	.517	.087
Age	.177	.191
Race/Ethnicity	.850	.198
Gender	.288	.982

### Summary

This chapter described and explained the results of the quantitative study to understand if equine activities had a positive effect on reducing the painful symptoms of anxiety and depression among adults. The results indicated that equine experiences had a positive impact on reducing the troublesome symptoms of anxiety and depression, a mental health condition that has affected millions of adults.

## CHAPTER FIVE

### DISCUSSION

#### Overview

This study sought to evaluate the impact of equine experiences on mental health issues. In particular, this study looked at the relationship between equine activities and anxiety and depression, two leading mental health disorders for adults (WHO, 2017). This study was a significant endeavor considering the scope and impact of mental health disorders not only in the United States, but also worldwide. Indeed, many people across the globe have been affected and stigmatized with mental health disorders. Many treatments for depression and anxiety have been used, but despite the use of various therapy treatments, the United States has repeatedly registered high numbers of people suffering from anxiety and depression (WHO, 2017). Embracing a one-group pre-test posttest design, this pre-experimental study revealed a strong correlation between equine activities and reduction of anxiety and depression levels, thereby rejecting its null hypothesis in the process.

The results of this study were uniform with previous studies that showed that people benefitted physically and psychologically when in relationships with animals (Crawford et al., 2006). The findings also reflected previous research by Selby and Smith-Osborne (2013) that maintained involving a horse used as a change mechanism, supplied various distinctive features that were not available



by way of other modes of treatment. Furthermore, there was consistency in findings found in the work of Malcolm et al., 2018 and Romaniuk et al., 2018 who conducted work on different types of mental disorders and different populations. Findings in these studies demonstrated that equine activities were effective for more than one mental disorder such as PTSD in veterans and autism in children. Anxiety and depression have been linked to PTSD and can be found in adults other than veterans as well.

#### Implications for Social Work Theory, Research, Practice and Education

##### Social Work Theory Implications

This study holds implications for theory, especially for Bowlby's Attachment Theory (1969). The literature has indicated and stressed the importance of bonding between caregiver and children and when secure bonding has not taken place challenges have appeared (Bowlby, 1988). Tenets and characteristics of Bowlby's Attachment Theory (1969) have corresponded with this study. Tenets from Bowlby's (1988) work, especially aligned with this study, were that a caregiver established a safe haven when a child was in distress, that a caregiver provided a secure base in which to learn and sort things out, a caregiver maintained close proximity for a child to explore and that a child experienced separation distress when away from the caregiver. This study replicated the tenets of Bowlby's (1988) theory in that horses provided a safe haven for people, a secure base in which a person could explore the world and sort things out and a horse maintained close proximity to a person. Bowlby's

theory stated that problematic relationships between primary caregiver and main people proved to be challenging when there was a lack of adequate, secure attachment within the relationship. Attachment-based psychotherapy, that has endeavored to solve past caregiver-client relationship issues, has used the therapy session to recreate past tricky caregiver-client associations to solve and rectify problematic, historic interactions in hopes of positively influencing present relationships (Bachi, 2013). Despite all types of treatment, anxiety and depression health disability has continued to be reported in high numbers (WHO, 2017), which has lent to implications that people have not sought traditional treatment or conventional treatment has not worked. This study confirms the findings by Bachi et al., (2012) who indicated that the existence of the horse allowed for both emotional and physical security, a critical environment in which a client would be afforded the opportunity to work on attachment issues that have proved to be challenging in the average adult. This study also illustrated that a horse could be used to recreate past challenging relationships between caregiver and client in order to solve and rectify problematic, historic interactions in hopes of positively influencing present relationships (Bachi, 2013).

### Research Implications

Previous research on equine activities has been limited to the autism in children (Malcolm et al., 2018) and PTSD among veterans (Romaniuk et al., 2018). The current study therefore makes a significant contribution to the literature by showing that equine activities that can be applied to average adults

suffering from anxiety and depression. This study also expanded the work previously done by Crawford et al. (2006) in which people benefitted physically and psychologically when in relationships with animals. The findings in this study also mirrored the work of Frewin and Gardiner (2005) detailing that a horse was able to respond to a person's intention and behavior without assumption or disapproval, which has been problematic for adults not wanting to seek face to face treatment for anxiety and depression. Furthermore, despite not being a strong statistical test, this study's use of the non-parametric Wilcoxon Signed Rank test was in and of itself a contribution to the literature on equine interventions.

#### Social Work Practice Implications

The findings in this study hold major implications for micro social work practice. In fact, mental health has been a key component in the field of social work with reported high numbers of people suffering from depression and anxiety (WHO, 2017). According to the Council of Social Work Education (2018), mental health was the most popular area for field placement and field of practice in 2017. In other words, social workers have been likely to encounter people with the mental health issues of anxiety and depression, which have been a common mental health issue for many Americans (WHO, 2017).

The findings in this study showed effectiveness of equine activities and represent a new tool in a practitioner's toolbox. The stigmatization of mental illness in society has cheated people out of an excellent life that has included

good jobs, safe and secure housing, sufficient health care and involvement with varied groups of people because mental health treatment was not sought (Corrigan & Watson, 2002). Many people that have needed psychological health treatment have not pursued treatment because of the humiliation and misunderstandings about mental illness (Corrigan & Watson, 2002), yet once engaged in an activity involving equine experiences, levels of anxiety and depression symptoms decreased. Results have indicated a strong correlation between equine activities and the reduction of symptoms of anxiety and depression in adults. Based on those results, social work practitioners can use equine activities to serve clients with mental health issues who might have been resistant to traditional therapy.

#### Social Work Education Implications

This study has implications in the field of social work education that professors can incorporate into micro social work practice university classes. Information on the benefits of equine activities can be taught and incorporated into instructional academic curriculum as another possible intervention in dealing with clients that suffer from symptoms of anxiety and depression. Students, professors and researchers of social work have an ethical responsibility to advocate for choices and additional treatment options for clients. The information from this study can be introduced in the seminar room, lecture hall, theater and college classrooms with the goal of educating social work students

about state-of-the-art interventions that can help address mental health disorders, including anxiety and depression.

### Limitations

Although conducted to the best ability of the researcher, this research was not immune to shortcomings. The most significant limitations associated with this study was small sample size, lack of diversity and relatively weaker research design. In fact, a greater number of participants would have added more weight to the findings. Furthermore, the diversity level for the participants was representative only of the few ranches and organizations surveyed. Although commendable, this study was not representative of the general population in the Inland Empire or Nashville, Tennessee let alone the United States. Moreover, the pre-experimental design was not strong enough to shield the findings from internal validity threats. The researcher, however, believed that this was the most appropriate design given the circumstances under which the study was conducted. It might also be helpful to mention that the researcher controlled for six different demographic variables: age, education, income, race/ethnicity, marital status and gender. Despite this, there is no way for the researcher to control for all possible predictors. Finally, some participants may underreport or overreport their anxiety and/or depression levels. Researchers could not control for reporting bias due to a lack of randomization.

## Recommendations

Future research can build on the findings of this study for new evaluation on equine interventions. Researchers who desire to replicate this study would be prudent to increase the sample size of the research participants to be able to provide a clearer picture as to the benefits of the intervention. The use of a control group, where one group participated in equine activities and one group did not, would provide researchers with a more definitive understanding as to the importance of equine activities in the reduction of the symptoms from anxiety and depression. Future research would also benefit from a more diverse group of participants. This would help in the generalization of findings. Experimental and longitudinal designs would allow researchers to have a better understanding about the effectiveness of equine activities regarding addressing anxiety and depression.

APPENDIX A

GENERALIZED ANXIETY DISORDER 7 ITEM SCALE AND  
PATIENT HEALTH QUESTIONNAIRE 9 ITEM SCALE

Included below are the Generalized Anxiety Disorder 7 item scale developed by Spitzer et al., 2006 and the Patient Health Questionnaire 9 item scale developed by Kroenke et al., 2001 that were given to each participant both before and after participating in equine activities.

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several Days	More than half the days	Nearly Everyday
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it's hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3
8. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things, or get along with other people?	Not difficult at all	Somewhat Difficult	Very difficult	Extremely difficult

GAD7 Total Score: \_\_\_\_\_

Over the last 2 weeks, how often have you been bothered by any of the following problems	Not at all	Several Days	More than half the days	Nearly everyday
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentration on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite- being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things, or get along with other people	Not difficult at all	Somewhat difficult	Very difficult	Extremely Difficult
11. I made plans to end my life in the last 2 weeks	Yes	No		

PHQ-9 Total Score: \_\_\_\_\_



APPENDIX B  
INFORMED CONSENT

## Informed Consent

The study in which you are asked to participate is designed to examine the effectiveness of equine activities in reducing the symptoms of anxiety and depression among adults. The study is being conducted by Denise Todd, a graduate student, under the supervision of Dr. Rigaud Joseph Assistant Professor in the School of Social Work at California State University, San Bernardino (CSUSB). The study has been approved by the Institutional Review Board, California State University, San Bernardino.

**PURPOSE:** The purpose of the study is to examine the effectiveness of equine experiences in reducing the symptoms of anxiety and depression, in adults after 8 to 10 hours of equine activities.

**DESCRIPTION:** Participants will be asked to fill out the PHQ-9 depression screening and the GAD-7 anxiety screening twice, both before and after 8 to 10 hours of equine experiences. Equine activities include, but are not limited to activities with horses such as: grooming, communicating, walking, riding, cleaning, feeding or any other activity associated with horses.

**PARTICIPATION:** Your participation in the study is totally voluntary. You can refuse to participate in the study or discontinue your participation at any time without consequences.

**CONFIDENTIALITY:** Your responses will remain confidential and data will be reported in group form only.

**DURATION:** It will take 5 to 10 minutes to complete each survey.

**RISKS:** Although not anticipated, there may be some discomfort in answering some of the questions. You are not required to answer and can skip the question or end your participation.

**BENEFITS:** There will not be any direct benefits to the participants.

**CONTACT:** If you have any questions about this study, please feel free to contact Dr. Joseph at (909) 537-5507.

**RESULTS:** Results of the study can be obtained from the Pfau Library ScholarWorks database (<http://scholarworks.lib.csusb.edu/>) at California State University, San Bernardino after July 2020.

.....  
This is to certify that I read the above and I am 18 years or older.

\_\_\_\_\_  
Place an X mark here

\_\_\_\_\_  
Date

APPENDIX C

MENTAL HEALTH RESOURCES

Dear Participants,  
Here is a list of resources for you in case any of the survey questions brought up some uncomfortable thoughts or feelings that you might want to discuss with someone.

#### Resources

##### Inland Empire, Ca

San Bernardino Department of Behavioral Health	909 386-8256
Crisis and Suicide Helpline (4357)	951 686-HELP
CARES line	800 706-7500
Peer Navigation Line	888 768-4968

##### Springerville/Eager, AZ

LITTLE COLORADO Behavioral Health Center	928 333-2683
Behavioral Health Centers of America	855 365-3080
NAMI-National Alliance on Mental Illness helpline	800 950-6264

##### Nashville, TN

Mobile Crisis Line	615 726-0125
National Suicide Prevention Lifeline (8255)	800 273-TALK
Crisis Center	615 244-7444

APPENDIX D  
INSTITUTIONAL REVIEW BOARD  
APPROVAL



October 17, 2019

**CSUSB INSTITUTIONAL REVIEW BOARD**

Administrative/Exempt Review Determination

Status: Determined Exempt

IRB-FY2020-43

Denise Todd-Stayner Rigaud Joseph  
CSBS - Social Work  
California State University, San Bernardino  
5500 University Parkway  
San Bernardino, California 92407

Dear Denise Todd-Stayner Rigaud Joseph

Your application to use human subjects, titled "Reducing Depression and Anxiety with Equine Activities" has been reviewed and approved by the Chair of the Institutional Review Board (IRB) of California State University, San Bernardino has determined that your application meets the requirements for exemption from IRB review Federal requirements under 45 CFR 46. As the researcher under the exempt category you do not have to follow the requirements under 45 CFR 46 which requires annual renewal and documentation of written informed consent which are not required for the exempt category. However, exempt status still requires you to attain consent from participants before conducting your research as needed. Please ensure your CITI Human Subjects Training is kept up-to-date and current throughout the study.

The CSUSB IRB has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval notice does not replace any departmental or additional approvals which may be required.

Your responsibilities as the researcher/investigator reporting to the IRB Committee the following three requirements highlighted below. Please note failure of the investigator to notify the IRB of the below requirements may result in disciplinary action.

- Submit a protocol modification (change) form if any changes (no matter how minor) are proposed in your study for review and approval by the IRB before implemented in your study to ensure the risk level to participants has not increased,
- If any unanticipated/adverse events are experienced by subjects during your research, and
- Submit a study closure through the Cayuse IRB submission system when your study has ended.

The protocol modification, adverse/unanticipated event, and closure forms are located in the Cayuse IRB System. If you have any questions regarding the IRB decision, please contact Michael Gillespie, the Research Compliance Officer. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at [mgillesp@csusb.edu](mailto:mgillesp@csusb.edu). Please include your application approval identification number (listed at the top) in all correspondence.

If you have any questions regarding the IRB decision, please contact Michael Gillespie, the Research Compliance Officer. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at [mgillesp@csusb.edu](mailto:mgillesp@csusb.edu). Please include your application approval identification number (listed at the top) in all correspondence.

Best of luck with your research.

Sincerely,

*Donna Garcia*

Donna Garcia, Ph.D., IRB Chair  
CSUSB Institutional Review Board

DG/MG

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